

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Original): A device implantable in a body for controlling a flow of fluid in a duct, said duct comprising a wall having an interior surface defining an aperture and an exterior, said implantable device comprising an electroactive polymer transducer operable to selectively occlude said aperture by displacement of said exterior of said wall of said duct.

Claim 2 (Original): The device of claim 1 wherein said electroactive polymer transducer operable to selectively occlude said aperture by displacement of said exterior of said wall of said duct comprises:

- (a) an actuator having a dimension defined by a first surface and a second surface, said dimension being alterable by application of electrical energy; and
- (b) a case having a first portion supporting said actuator proximate to said exterior of said wall on a first side of said duct and a second portion disposed proximate to said exterior of said wall on a second side of said duct, said second side of said duct being substantially diametrically opposed to said first side, such that a change in said dimension of said actuator will cause said first surface of said actuator to displace a portion of said wall in a direction substantially normal to said second side of said duct.

Claim 3 (Original): The device of claim 2 further comprising a sensing transducer outputting a signal responsive to a force exerted by said actuator.

Claim 4 (Original): The device of claim 1 wherein said electroactive polymer transducer operable to selectively occlude said aperture by displacement of said exterior of said wall of said duct comprises:

- (a) a first actuator having a dimension defined by a first surface and a second surface, said dimension alterable by application of electrical energy, said actuator restrained such that said first surface is proximate said exterior of said wall of said duct;
- (b) a second actuator having a dimension defined by a first surface and a second surface and alterable by application of electrical energy, said second actuator restrained such that said first surface is proximate said exterior of said wall and substantially diametrically opposed to said first surface of said first actuator; and
- (c) a case to restrain said first and said second actuators relative to said duct and to react a force caused by a change in said dimension of said first and said second actuators.

Claim 5 (Original): The device of claim 4 further comprising a sensing transducer outputting a signal responsive to a force exerted by said actuator.

Claims 6 – 31 (cancelled):

Claim 32 (Original): A system for controlling a flow of fluid in a body duct including a wall having an interior surface defining an aperture for fluid flow and an exterior, said system comprising

- (a) an electroactive polymer duct occluding transducer operable to selectively occlude said duct in response to a first signal;
- (b) a program executable by a data processing device including a program

- instruction directing an output of said first signal; and
- (c) a data processing device outputting said first signal to said electroactive polymer duct occluding transducer in response to said program instruction.

Claim 33 (Original): The system of claim 32 further comprising:

- (a) a sensing transducer outputting a second signal to said data processing device, said second signal being responsive to one of a fluid pressure and a force exerted by said electroactive polymer duct occluding transducer; and
- (b) another program instruction executable by said data processing device relating said second signal to said first signal.

Claim 34 (Original): The system of claim 32 further comprising

- (a) a fluid pressure assist device for increasing a pressure of said fluid in a reservoir having a flow connection to said duct, said fluid pressure assist device being responsive to third signal from said data processing device; and
- (b) another program instruction executable by said data processing device relating said first signal and said third signal.

Claim 35 (Original): The system of claim 34 further comprising:

- (a) a sensing transducer outputting a second signal to said data processing device, said second signal being responsive to one of a fluid pressure and a force exerted by said electroactive polymer duct occluding transducer; and
- (b) an additional program instruction executable by said data processing device relating said second signal to at least one of said first signal and said third signal.

Claims 36 - 44 (cancelled):